

**REMARKS****THE RESTRICTION REQUIREMENT**

The Examiner's Restriction Requirement imposed in the Office Action dated September 17, 2002 is legally improper and (1) must be withdrawn or (2) must be substantiated by supporting evidence.

Although Applicants were obligated to elect for prosecution one of the eleven species carved out by the Examiner, such election was traversed. The present Office Action (Paper No. 9) does not address the merits of the traverse, provides no rebuttal, and does not indicate whether or not the Restriction Requirement has been made final.

Under 35 U.S.C. § 121 and 37 C.F.R. § 1.142, an application may properly be required to be restricted to one of two or more claimed inventions only if they are able to support separate patents and they are either independent or distinct. Regarding the latter, the inventions must be independent (see MPEP §§ 802.01, 806.04, 808.01) or distinct as claimed (see MPEP §§ 806.05 - 806.05(i)). To properly support this prerequisite, the Examiner must provide reasons and/or examples to support conclusions (see, e.g., MPEP § 803). The Examiner has not provided any reasons why the different embodiments are independent (i.e., there is no disclosed relationship between the embodiments which are unconnected in design, operation, or effect) or distinct (e.g., each embodiment is capable of separate manufacture, use, or sale, AND are patentable over each other).

Species are not necessarily independent. Where inventions as disclosed and claimed are both (A) species under a claimed genus and (B) related, then the question of restriction must be determined by both the practice applicable to the election of species and the practice applicable to other types of restrictions (e.g., MPEP §§ 806.04(b), 806.05

- 806.05(i)). For the reasons noted in the October 17, 2002 Response to Restriction Requirement, the latter prong has not been satisfied, nor has the Examiner shown that the restricted claims are not species under a claimed genus that are related.

Therefore, for the above reasons, the Examiner's Restriction Requirement is submitted to be improper. The Examiner is respectfully requested to withdraw the Restriction Requirement and consider the application in its entirety.

In the alternative, it is requested that the Examiner make the Restriction Requirement final so as to permit the Applicants the opportunity to appeal the Restriction Requirement under 37 C.F.R. § 1.144. Such determination should be accompanied by an express statement that the Examiner finds the species to be independent and patentably distinct from the elected claims.

Further, the right to request rejoinder is maintained.

**THE 35 U.S.C. § 112, SECOND PARAGRAPH REJECTION**

Claims 31 and 32 were rejected under 35 U.S.C. § 112, second paragraph, as lacking antecedent basis for the limitation "the speed sensing device". Claims 31 and 32 have been amended to correct the identified antecedent basis issue by changing the word "the" to "a". Reconsideration and withdrawal of this rejection is requested.

**THE 35 U.S.C. § 102(A) REJECTION OVER RAJKONDAWAR**

Claims 1-7, 58, 61, 62 and 91 were rejected under 35 U.S.C. § 102(a) as being anticipated by **Rajkondawar**.

As an initial matter, this rejection is legally improper since the Examiner has not shown that **Rajkondawar** demonstrates the invention was "known or used by others in this country, or patented or described in a printed publication in this . . . country, *before the invention thereof by the applicant for patent*", as required by 35 U.S.C. § 102(a). The instant application claims the benefit from U.S. Provisional Application No. 60/207,823, filed on May 30, 2000. The website from which the Examiner printed the **Rajkondawar** reference does not, in fact, specify a publication date for this particular item cited by the Examiner. As such, the rejection fails to advance a *prima facie* case of anticipation under 35 U.S.C. § 102(a) and withdrawal is requested for this reason.

Moreover, withdrawal of this rejection is requested in view of the accompanying affidavit by Parimal Rajkondawar, which attests that he (Parimal Rajkondawar) published the website article in question on or about March 23, 2001, after the filing date of U.S. Provisional Application No. 60/207,823 (May 30, 2000) to which the instant application claims priority. Therefore, this reference is not prior art under 35 U.S.C. § 102(a). Withdrawal is requested.

**THE 35 U.S.C. § 102(F) REJECTION OVER RAJKONDAWAR**

Claims 1-7, 58, 61, 62 and 91 were rejected under 35 U.S.C. § 102(f) because the inventors allegedly did not invent the claimed subject matter.

The Examiner alleged that **Rajkondawar** was not listed as an inventor of the current application, "even though a majority of the current application appears to come from his scientific paper". The Examiner also alleges that "Neerchal and Dyer are not

listed as inventors of the current invention even though these two other people assisted Rajkondawar with the research".

In response to this allegation, the inventors hereby provide a showing of inventorship by way of affidavit under 37 C.F.R. § 1.132, attesting in an "unequivocal statement" that the present inventorship is correct and that **Rajkondawar** discloses subject matter *derived from the applicants* rather than invented by the author, Parimal Rajkondawar.

To further establish the correctness of the inventorship, as it currently stands, the enclosed affidavit under 37 C.F.R. § 1.132 *executed by Parimal Rajkondawar*, the author of **Rajkondawar**, attests that the present inventorship is correct and that he, Parimal Rajkondawar, was a graduate student working on the invention developed by the presently named inventors under the direction, supervision, and instruction of Uri Tasch (a named inventor). In the Declaration, Mr. Rajkondawar attests that the information he published, which was cited by the Examiner, "did not reflect inventive work on my part, but the inventive work of others (Uri Tasch, Alan M. Lefcourt, Mark A. Varner, and Benny Erez)". Mr. Rajkondawar attests that his participation in the project was confined to "the testing and evaluation of the invention".

37 C.F.R. § 1.132 affidavits executed by inventors Uri Tasch, Alan M. Lefcourt, Benny Erez and Mark Varner are also enclosed and attest to the same facts noted above (i.e., that Parimal Rajkondawar made valued contributions to the implementation and testing of the invention developed by Uri Tasch, Alan M. Lefcourt, Mark Varner, and Benny Erez, but was not himself an inventor).

Accordingly, the 35 U.S.C. § 102(f) rejection should be withdrawn.

THE 35 U.S.C. § 102(B) REJECTION OVER ROOST

Claims 1-7 were rejected under 35 U.S.C. § 102(b) as being anticipated by **Roost**. Reconsideration is requested.

**Roost** is alleged to disclose a means for investigating the gait of a living being comprising a first plate 3, a second plate 3, and a first plurality of load cells 7, each of the load cells configured to detect an applied force to the first plate, a second plurality of load cells, each of the load cells configured to detect an applied force to the second plate.

**Roost** is also said to provide a processor to execute at least one force analysis instruction set, the force analysis instruction set receiving the signals output from the first and second plurality of load cells and calculating, in combination with the processor, a magnitude and location of a force applied to either of the first plate and the second plate.

In fact, **Roost** provides a "measuring surface is subdivided lamellar-fashion at right angles to the direction of movement" (see Abstract). More particularly, **Roost** teaches that "[t]he measuring surface 4 is substantially horizontal and forms part of the ground, being subdivided substantially at right angle to the direction of movement X of the living being into measuring sections 29." **Roost** further teaches that "[t]he measuring sections 29, of which only a few are shown in FIG. 1 to make the drawing clearer, are elongate in construction and disposed parallel to each other in lamellar fashion, and to each measuring section corresponds a force sensing device 3 having a substantially rectangular force sensing surface" and notes that "[t]he width of the individual measuring section 29 is, for example, 25 mm and is therefore smaller than the length of the horse's foot" (col. 9, lines 1-13).

However, **Roost** does not teach or suggest, as claimed, "a first plate arranged on one side of the diagnostic system, said one side corresponding to one of a left and a right side of an animal and extending in a direction of travel of the animal" and "a second plate arranged on another side of the diagnostic system, said another side corresponding to another one of a left and a right side of an animal and extending in a direction of travel of the animal, said second plate being disposed adjacent the first plate" (see, e.g., Fig. 1).

Instead, as shown in Fig. 1 of **Roost**, the measuring section comprises a sequential arrangement of plates (i.e., a surface "subdivided lamellar-fashion") at right angles to a direction of movement of the animal (i.e., a horse). Accordingly, **Roost** is fundamentally different in configuration from the present invention, an example of which is illustrated in Fig. 1, which depicts a first plate (e.g., 130) arranged on one side of the diagnostic system corresponding to a left of an animal and a second plate (e.g., 120) arranged on another side of the diagnostic system corresponding to a right side of an animal, each of the first plate and second plate extending in a direction of travel of the animal.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."

*Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

As **Roost** does not identically teach or suggest the claimed invention, reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejection thereover is requested.

**THE 35 U.S.C. § 102(B) REJECTION OVER TSUCHIYA ET AL.**

Claims 58, 61, 62 and 91 were rejected under 35 U.S.C. § 102(b) as being anticipated by **Tsuchiya et al.** (hereinafter "**Tsuchiya**"). Reconsideration is requested.

**Tsuchiya** is alleged to disclose, *inter alia*, "an apparatus for analyzing the gait of a person and further discloses guiding the animal across an instrumented force-sensing floor comprising a left floor plate and a right floor plate, a plurality of load cells for measuring the force applied to the left and right plates; constraining at least one of the animal's body movement and leg movement so the animal's left limbs contact the left plate and the right limbs contact the right plate; calculating forces applied to the left plate and the right plate by summing the output signals of the plates; and comparing the calculated forces to determine the condition of the gait.

9 The Examiner's characterization of **Tsuchiya** is incorrect. **Tsuchiya** has absolutely nothing to do with "analyzing the gait of a person". **Tsuchiya** provide "an apparatus for analyzing the human body's balancing function which is adapted to analyze the body load distributions of the person tested and display the analyzed results so as to enable the person tested to autonomously sense his balancing adjustability by means of visual feedbacks and obtain his own proper balancing ability" (col. 1, lines 29-36). **Tsuchiya** also provide an apparatus for analyzing the human body's balancing function "adapted to heteronomously disturb the balanced conditions of the person tested into an unbalanced one and make the person tested autonomously correct the unbalanced condition into a balanced one, and learn the feeling of this correction." (col. 1, lines 37-43). In the **Tsuchiya** apparatus, "a pair of foot steps 11, 12, are provided, parallel with each other and keeping a proper distance between them", as shown in Fig. 2. The person

being tested puts his right and left feet on a respective one of the foot steps to permit analysis of the person's body load distribution in the right and left directions (col. 2, lines 19-22). In other words, "the person tested gets on the foot steps 11 and 12 as shown in FIG. 2" (col. 2, lines 23-24).

**Tsuchiya's** balancing apparatus therefore does not, as alleged by the Examiner, disclose "an apparatus *for analyzing the gait of a person*" and nor "*guiding the animal across* an instrumented force-sensing floor". Instead, **Tsuchiya** requires that the subject - specifically a person - balance while standing on the foot steps 11, 12. In fact, **Tsuchiya** provide transverse bars 40, 41 "so that the person tested who gets on the foot steps 11 and 12 may hold them by his hands and thus assist the body balance maintenance force in case he is unable to stand on this feet." (col. 2, lines 62-66; see also col. 4, lines 46-49).

Accordingly, with respect to claim 58 and claims depending therefrom, **Tsuchiya** does not teach (or suggest) a computer-based method for detecting and analyzing ground reaction forces produced by an animal, comprising the steps of: guiding an animal to move across an instrumented force-sensing floor comprising a left floor plate, a right floor plate, a plurality of left floor plate load cells configured to measure a force applied to the left floor plate by movement of the animal's left limbs across the left floor plate of the force-sensing floor and output a force proportioned signal, and a plurality of right floor plate load cells configured to measure a force applied to the right floor plate by movement of the animal's right limbs across the right floor plate of the force-sensing floor and output a force proportioned signal, nor does **Tsuchiya** teach (or suggest) constraining at least one of the animal's lateral body movement and leg movement so that



the animal's left limbs contact the left floor plate and the animal's right limbs contact the right floor plate as the animal moves across the force-sensing floor.

With respect to claim 91 and claims depending therefrom, **Tsuchiya** does not teach (or suggest) a computer-readable medium bearing instructions enabling a computer having at least one processor to detect and analyze ground reaction forces produced by an animal to determine a physical condition of the animal, the instructions, when executed by a computer, causing the computer to carry out the steps of: calculating ground reaction forces produced by the animal as it moves across a left floor plate and a right floor plate by summing the force proportioned signals output by load cells separately measuring loads of each of the left floor plate and the right floor plate caused by movement of the animal across the respective left floor plate and right floor plate; and comparing the calculated forces corresponding to movement of the animal across the left floor plate and right floor plate to a range of forces indicative of at least one of a sound animal condition, an indeterminate animal condition, or a lame animal condition.

As **Tsuchiya** does not identically teach or suggest the claimed invention, reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejection thereover is requested.

**THE 35 U.S.C. § 103(A) REJECTION OVER TSUCHIYA ET AL.**

Claims 8 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over **Roost** in view of **Tsuchiya**. Reconsideration is requested.

As noted above, **Roost** provides a "measuring surface is subdivided lamellar-fashion at right angles to the direction of movement" (see Abstract). **Roost** teaches that

"[t]he measuring surface 4 is . . . subdivided substantially at right angle to the direction of movement X of the living being into measuring sections 29 . . . elongate in construction and disposed parallel to each other in lamellar fashion, and to each measuring section corresponds a force sensing device 3 having a substantially rectangular force sensing surface". "The width of the individual measuring section 29 is, for example, 25 mm and is therefore smaller than the length of the horse's foot" (col. 9, lines 1-13).

**Roost** does not teach or suggest, as claimed, "a first plate arranged on one side of the diagnostic system, said one side corresponding to one of a left and a right side of an animal and extending in a direction of travel of the animal" and "a second plate arranged on another side of the diagnostic system, said another side corresponding to another one of a left and a right side of an animal and extending in a direction of travel of the animal, said second plate being disposed adjacent the first plate" (see, e.g., Fig. 1). Accordingly, **Roost** is fundamentally different in configuration from the present invention, an example of which is illustrated in Fig. 1.

Also noted above, **Tsuchiya** has absolutely nothing to do with "analyzing the gait of a person", contrary to the Examiner's assertion (see Paper No. 9, numbered paragraphs 9 and 11). Instead, **Tsuchiya** provide, for example, "an apparatus for analyzing the human body's balancing function which is adapted to analyze the body load distributions of the person tested and display the analyzed results so as to enable the person tested to autonomously sense his balancing adjustability by means of visual feedbacks and obtain his own proper balancing ability" (col. 1, lines 29-36). In the **Tsuchiya** apparatus, the person being tested puts his right and left feet on a respective one of the foot steps 11, 12

to permit analysis of the person's body load distribution in the right and left directions (col. 2, lines 19-22).

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." 916 F.2d at 682 (see also *In re Fritch*, 972 F.2d at 1260 (Fed. Cir. 1992)).

The showing must be clear and particular. See, e.g., *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements, standing alone, are not "evidence". *McElmurry v. Arkansas Power & Light Co.*, 995 F.2d 1576, 1578 (Fed. Cir. 1993). "The factual inquiry whether to combine references must be thorough and searching". *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52 (Fed. Cir. 2001). It must be based on objective evidence of record. *In re Sang-Su Lee*, Case 00-1158 (Serial No. 07/631,240) (Fed. Cir. January 18, 2002); *see also In re Thrift*, Case 01-1445 (Serial No. 08/419,229) (Fed. Cir. August 9, 2002). The need for specificity pervades this authority. *In re Sang-Su Lee, supra, citing In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed").

In the present case, the Examiner simply alleges that one of ordinary skill in the art would combine the step-up and step-down ramps of **Tsuchiya**, along with the side hand rails, to the apparatus of **Roost**. Not only is this combination not suggested by the

references, **Roost** teaches away from such modification. **Roost** must be considered in its entirety, including portions that would lead one skilled in the art away from the claimed invention. See *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983). Specifically, **Roost** teaches that "for the solution of the problem the measuring area must have a texture which is very similar to the normal ground in mechanical, acoustic, and optical respects, since the living being should notice no difference between the normal ground and the measuring area" (col. 4, lines 24-29). **Roost** continues to state that "the measuring area . . . must look and sound like the surrounding normal ground" (col. 4, lines 29-32). **Roost** therefore teaches away from use of ramps and side-rails, such as provided by **Tsuchiya**.

Additionally, **Roost** implies that addition of features such as ramps and side rails would, by creating unmistakable differences mechanically and optically from the "normal ground" surrounding the measuring device, render the measuring device unfit for its intended purpose since potentially skittish animals (e.g., horses) might be spooked by the appearance of the device. In this regard, it is noted that "[i]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984)(emphasis added).

Further, the alleged "divider" of **Tsuchiya** is merely a gap between plates. It is noted that combination of the "divider" or gap of **Tsuchiya** with the apparatus of **Roost** would yield a plurality of force measuring sections 29 having gaps spaced therebetween to create a plurality of gaps extending perpendicularly to the direction of travel of the animal.

Such combination would not produce the claimed invention which requires, for example, a first plate arranged on one side of the diagnostic system, said one side corresponding to one of a left and a right side of an animal and extending in a direction of travel of the animal and a second plate arranged on another side of the diagnostic system, said another side corresponding to another one of a left and a right side of an animal and extending in a direction of travel of the animal, said second plate being disposed adjacent the first plate.

Moreover, even if the Examiner were to allege one skilled in the art would, contrary to the teachings away and other indicators of non-obviousness, somehow deem it obvious to redesign **Roost** to arrange the measuring sections in the direction of travel of the animal, the inclusion of the gap would be hazardous to the animal subject. For a human being instructed to stand on the dotted lines (i.e., footprints 11, 12), a gap is an easily observed and easily surmounted obstacle. However, when it is desired to analyze the walking gait of an animal (or running, galloping, or trotting gaits), such gaps could prove disastrous and could injure the animals, who would like not observe or comprehend the hazard of a gap between plates extending in a direction of movement of the animal.

For the above reasons, the combination of **Tsuchiya** with **Roost** is not suggested by the references or by the knowledge available to one of ordinary skill in the art and, as such, a conclusion of obviousness under 35 U.S.C. § 103(a) is improper.

Still further, the specifically claimed "upwardly projecting divider" is nowhere taught or suggested in either **Roost** or **Tsuchiya**. In fact, if the claimed "upwardly projecting divider" were provided in the apparatus of **Roost**, it is possible if not likely that the object of study (i.e., a horse) would inadvertently contact "an upwardly projecting

divider" during running, trotting, or galloping (wherein the horse would lift its legs to a significant degree)(see col. 3, lines 62-67), thereby injuring the horse's leg and possibly requiring destruction of the animal.

For at least the above reasons, it is submitted that **Roost** and **Tsuchiya**, whether taken singly or in combination, do not teach or suggest the invention of claims 8 and 9. Reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection thereover is requested.

**THE REMAINING PTO-892 REFERENCES**

**Fuglewicz et al.** (U.S. Pat. No. 5,299,454) appears unable to make up for the deficiencies of **Roost** and **Tsuchiya**.

"Zhang et al., Mechanical Characterization of Bovine Hooves: Comparing Healthy and Ailing Hooves, Abstract" should have been properly cited as "Zhang, D., P. Rajkondawar, D. Arola, *and U. Tasch (2002)* "Mechanical Characterization of Bovine Hooves: Comparing Healthy and Ailing Hooves," Proceedings of the SEM Annual Conference on Theoretical, Experimental and Computational Mechanics, Milwaukee, Wisconsin, June 10-12, pp. 256" (emphasis added). It is merely pointed out that this reference does not constitute prior art to the invention.

**ALLOWANCE OF CLAIMS 1-96 IS REQUESTED**

The Examiner was required, under C.F.R. § 1.104(c), to "cite the best references at his or her command". The Examiner was also obligated to reject each claim on all valid grounds available (see MPEP § 707.07(g)) and to conduct a first search covering the

invention as described in the specification, as well as the invention claimed and the inventive concepts toward which the claims appear to be directed (see, e.g., MPEP § 904). Such requirements upon the Examiner seek to avoid the obvious detriment, to the applicants and to society, of “piece-meal” prosecution. *See, e.g., In re Morris*, 127 F.3d 1048 (Fed. Cir. 1997); MPEP § 706.07.

It is therefore concluded that the Examiner's first search (PTO-892) has covered the invention as described in the specification, as well as the invention claimed and the inventive concepts toward which the claims appear to be directed and that the Examiner's rejections reflect the best references and arguments available to the Examiner.

Accordingly, in view of the amendments and remarks herein, it is submitted that the present claims (which claim more explicitly that which is clearly described and depicted in the application) patently define over the applied art and the cited art and raise no new issues that would require further search and/or consideration by the Examiner.

For the above reasons, allowance of claims 1-9, 31, 32, 58, 61, 62 and 91 are requested.

It is further requested that claims 10-30, 33-57, 59, 60, 63-90 and 92-96 be allowed, based at least upon the dependency of such claims from at least one of the aforementioned claims 1-9, 31, 32, 58, 61, 62 and 91.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY



William D. Pegg  
Registration No. 42,988

600 13<sup>th</sup> Street, N.W.  
Washington, DC 20005-3096  
(202) 756-8000 WDP:kap  
Facsimile: (202) 756-8087  
**Date: April 7, 2003**



**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

Claims 1, 9, 31, 32, 58 and 91 have been amended as follows:

1. (Amended) A computer-based diagnostic system to detect and analyze ground reaction forces produced by an animal passing through the diagnostic system, comprising:

a first plate arranged on one side of the diagnostic system, said one side corresponding to one of a left and a right side of an animal and extending in a direction of travel of the animal;

a second plate arranged on another side of the diagnostic system, said another side corresponding to another one of a left and a right side of an animal and extending in a direction of travel of the animal, said second plate being disposed adjacent the first plate;

a first plurality of load cells, each of the first plurality of load cells configured to detect a force applied to the first plate along at least one axis and output a signal representative of the detected force;

a second plurality of load cells, each of the second plurality of load cells configured to detect a force applied to the second plate along at least one axis and output a signal representative of the detected force; and

a processor adapted to execute at least one force analysis instruction set,

whereby the force analysis instruction set receives the signals output from the first and second plurality of load cells and calculates, in combination with the processor, a magnitude and location of a force applied to either of the first plate and the second plate.

9. (Amended) A computer-based diagnostic system to detect and analyze ground reaction forces produced by an animal passing through the diagnostic system in accord with claim 8, further comprising:

a railing disposed on each side of the step-up, adjacent an outside side of the first plate, adjacent an outermost side of the second plate, and on each side of the ramp down;

[a] an upwardly projecting divider disposed between the first plate and the second plate.

31. (Amended) A computer-based diagnostic system to detect and analyze ground reaction forces produced by an animal passing through the diagnostic system in accord with claim 29, wherein the force analysis instruction set comprises instructions which, when executed by the processor, compute a speed of the animal using a signal output by [the] a speed sensing device.

32. (Amended) A computer-based diagnostic system to detect and analyze ground reaction forces produced by an animal passing through the diagnostic system in accord with claim 30, wherein the force analysis instruction set comprises instructions which, when executed by the processor, compute a speed of the animal using a signal output by [the] a speed sensing device.

58. (Amended) A computer-based method for detecting and analyzing ground reaction forces produced by an animal, comprising the steps of:

guiding an animal to move across an instrumented force-sensing floor comprising a left floor plate, a right floor plate, a plurality of left floor plate load cells configured to measure a force applied to the left floor plate by movement of the animal's left limbs across the left floor plate of the force-sensing floor and output a force proportioned signal, and a plurality of right floor plate load cells configured to measure a force applied to the right floor plate by movement of the animal's right limbs across the right floor plate of the force-sensing floor and output a force proportioned signal;

constraining at least one of the animal's lateral body movement and leg movement so that the animal's left limbs contact the left floor plate and the animal's right limbs contact the right floor plate as the animal moves across the force-sensing floor;

calculating forces applied to the left floor plate and to the right floor plate by summing the signals output by the left floor plate load cells and right floor plate load cells, respectively; and

comparing the calculated forces to a range of forces indicative of at least one of a sound animal condition, an indeterminate animal condition, or a lame animal condition.

91. (Amended) A computer-readable medium bearing instructions enabling a computer having at least one processor to detect and analyze ground reaction forces produced by an animal to determine a physical condition of the animal, the instructions, when executed by a computer, causing the computer to carry out the steps of:

calculating ground reaction forces produced by the animal as it moves across a left floor plate and a right floor plate by summing the force proportioned signals output by load cells separately measuring loads of each of [a] the left floor plate and [a] the right

floor plate caused by movement of the animal across the respective left floor plate and right floor plate; and

comparing the calculated forces corresponding to movement of the animal across the left floor plate and right floor plate to a range of forces indicative of at least one of a sound animal condition, an indeterminate animal condition, or a lame animal condition.